

**SVKM's**  
**D. J. Sanghvi College of Engineering**

**Program: B.Tech in Computer Engineering**

**Academic Year: 2022**

**Duration: 3 hours**

**Date: 11.01.2023**

**Time: 10:30 am to 01:30 pm**

**Subject: Distributed Computing (Semester VII)**

**Marks: 75**

<b>(1) All Questions are compulsory.</b> <b>(2) All questions carry equal marks.</b> <b>(3) Answer to each new question is to be started on a fresh page.</b> <b>(4) Figures in the brackets on the right indicate full marks.</b> <b>(5) Assume suitable data wherever required, but justify it.</b> <b>(6) Draw the neat labeled diagrams, wherever necessary.</b>		
<b>Question No.</b>		<b>Max. Marks</b>
Q1 (a)	Define Distributed Systems. Explain in detail the issues in designing distributed systems.  <b>OR</b> State the objectives of middleware in distributed systems. Explain the types of middleware with suitable example.	[10]  [10]
Q1 (b)	Explain the desirable features of global scheduling algorithm.	[05]
Q2 (a)	i. Explain RPC Communication Protocols. ii. Differentiate between RPC and RMI. <b>OR</b> What is Remote Procedure Call? Discuss the working of RPC in detail.	[05] [05] [10]
Q2 (b)	Discuss the different types of RPC bindings.	[05]
Q3 (a)	Explain Lamport's Logical Clock algorithm. <b>OR</b> Explain Raymond's Tree Based algorithm.	[05] [05]
Q3 (b)	Explain Ricart-Agrawala's algorithm for Mutual Exclusion with example.	[10]
Q4 (a)	Illustrate the Data Centric Consistency Models with suitable examples. <b>OR</b> Explain Reliable Group Communication in detail.	[10] [10]
Q4 (b)	Discuss the Load-sharing approach along with its Load Estimation and Process Transfer Policies.	[05]
Q5 (a)	State the difference between Replication and Caching and explain the advantages of Replication.  <b>OR</b> Describe the features of Distributed File System (DFS).	[05] [05]
Q5 (b)	Explain File Caching Schemes in detail.	[10]